



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

December 30, 2013

WELL WORK PERMIT

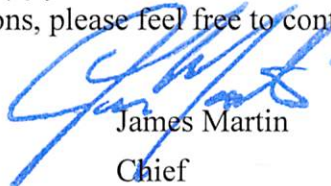
Horizontal 6A Well

This permit, API Well Number: 47-1706398, issued to ANTERO RESOURCES CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: MCMILLIAN UNIT 2H
Farm Name: TRUSTEES CHESTNUT GROVE C
API Well Number: 47-1706398
Permit Type: Horizontal 6A Well
Date Issued: 12/30/2013


Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACOE). Through this permit, you are hereby being advised to consult with USACOE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

| | | |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------|
|  | Applicant: Antero Resources Corporation | Type: Horizontal 6A Well |
| | Reference ID: McMillan Unit 2H (Chestnut Pad) (09/26/2013) | Permit ID: New/Pending |
| | Status: New | Printed: Dec. 30, 2013 |
| | | 12:42 PM |

WW-6B: General and Location Information

| | | |
|-------------------------|-------------------------------------------------------------------------------------------------|----------------|
| API Number: | 47-017-06398 | (47-____-____) |
| Operator's Well Number: | McMillan Unit 2H | |
| Filing Fee: | <input type="radio"/> First Well on Pad <input checked="" type="radio"/> Subsequent Well on Pad | 5,150.00 |
| Well Pad Name: | Chestnut Pad | |
| Surface Owner: | Trustees of Chestnut Grove Church | |
| Public Road Access: | CR 14 | |

Please attach each of the following as separate documents:

- Well Plat
- Wellbore Schematic

| | | | |
|----------------------------------------------------------------------------|-----------|-----------|------------------|
| County: | Doddridge | District: | West Union |
| Quadrangle: | SMITHBURG | | |
| Top Hole(UTM NAD83): | | | |
| Easting: | 524017 | Northing: | 4357129 Zone: 17 |
| Proposed Landing Point(UTM): | | | |
| Easting: | 524396 | Northing: | 4357393 Zone: 17 |
| Proposed Bottom Hole(UTM): | | | |
| Easting: | 525544 | Northing: | 4354552 Zone: 17 |
| Elevations (feet) -- Current Ground: 1155 Proposed Post-Construction: 1115 | | | |

| | |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Well Type: | <input checked="" type="radio"/> Gas <input type="radio"/> Oil |
| | <input type="radio"/> Underground Storage <input type="radio"/> Other |
| Will well be drilled more than 100 feet into the Onondaga Group? <input type="radio"/> Yes <input checked="" type="radio"/> No | |
| Depth Type: | <input checked="" type="radio"/> Shallow <input type="radio"/> Deep |
| Existing Pad? | <input type="radio"/> Yes <input checked="" type="radio"/> No |

Target Formations

Complete the following table.

| Target Formation | Depth-Top (ft) | Anticipated Thickness (ft) | Associated Pressure (psi) |
|------------------|----------------|----------------------------|---------------------------|
| Marcellus Shale | 7200 | 55 | 2950 |

Depth Specifics

Proposed Post-Construction Elevation: 1377

Proposed Total Vertical Depth: 7200 (ft.)

Formation at Total Vertical Depth: Marcellus Shale

Proposed Total Measured Depth: 19500 (ft.)

Proposed Total Horizontal Leg Length: 10056 (ft.)

Method to Determine Fresh Water Depth:

Offset well records. Depths have been adjusted according to surface elevations.

Approximate Fresh Water Strata Depths

222 (ft.)

249 (ft.)

Approximate Coal Seam Depths

295 (ft.) Coal Seam Name, if known:

812 (ft.) Coal Seam Name, if known:

1122 (ft.) Coal Seam Name, if known:

Approximate Depth to Possible Void(coal mine, karst, other)

(ft.) Not Anticipated: ☒

Approximate Saltwater Depths

1020 (ft.)

1514 (ft.)

Well Work and Mine Details

Is proposed well location directly overlying or tributary to an active mine?

☐ Yes
 ☒ No

If Yes, indicate name, depth, coal seam and owner of mine:

Coal Seam: Depth:

Mine Name: Owner:

Describe proposed well work, including the drilling and plugging back of any pilot hole.

Describe fracturing/stimulating methods in detail, including anticipated max pressure and anticipated max rate.

Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): Area to be disturbed for well pad only, less access road (acres): **Casing and Cementing**Complete the following table, adding as many rows of each **Type** as needed.

| Type | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | Footage: For Drilling | Intervals: Left in Well |
|----------------------------------------------|------------------------|--------------------|---------------------|------------------------|-------------------------------------|-------------------------|
| Conductor <input type="button" value="v"/> | 20" | New | H-40 | 94# | 40 | 40 |
| | Wellbore Diameter (in) | | Wall Thickness (in) | | Burst Pressure (psi) | |
| | 24" | | 0.438" | | 1530 | |
| | Cement Type | Yield (cu. ft./sk) | Fillup - Cubic Feet | Top of Cement | Circulated to Surface? | |
| | Class A | 1.18 | 38 | 0 | <input checked="" type="checkbox"/> | |
| Type | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | Footage: For Drilling | Intervals: Left in Well |
| Fresh Water <input type="button" value="v"/> | 13-3/8" | New | J-55/H-40 | 54.5#/48# | 305 | 305 |
| | Wellbore Diameter (in) | | Wall Thickness (in) | | Burst Pressure (psi) | |
| | 17-1/2" | | .38"/.33" | | 2730 | |
| | Cement Type | Yield (cu. ft./sk) | Fillup - Cubic Feet | Top of Cement | Circulated to Surface? | |
| | Class A | 1.18 | 424 | 0 | <input checked="" type="checkbox"/> | |

| Type | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | Footage: For Drilling | Intervals: Left in Well |
|------------------------|-----------|---------------------|---------------------|------------------------|-------------------------------------|-------------------------|
| Coal ▾ | 9-5/8" | New | J-55 | 36# | 2460 | 2460 |
| Wellbore Diameter (in) | | Wall Thickness (in) | | Burst Pressure (psi) | | |
| 12-1/4" | | 0.352" | | 3520 | | |
| Cement Type | | Yield (cu. ft./sk) | Fillup - Cubic Feet | Top of Cement | Circulated to Surface? | |
| Class A | | 1.18 | 1002 | 0 | <input checked="" type="checkbox"/> | |

| Type | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | Footage: For Drilling | Intervals: Left in Well |
|------------------------|-----------|---------------------|---------------------|------------------------|--------------------------|-------------------------|
| Production ▾ | 5-1/2" | New | P-110 | 20# | 19500 | 19500 |
| Wellbore Diameter (in) | | Wall Thickness (in) | | Burst Pressure (psi) | | |
| 8.75"/8.5" | | 0.361" | | 12630 | | |
| Cement Type | | Yield (cu. ft./sk) | Fillup - Cubic Feet | Top of Cement | Circulated to Surface? | |
| Lead-H/POZ & Tail - H | | H/POZ-1.44 | 4967 | 1960 | <input type="checkbox"/> | |

| Type | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | Footage: For Drilling | Intervals: Left in Well |
|------------------------|-----------|---------------------|---------------------|------------------------|--------------------------|-------------------------|
| Tubing ▾ | 2-3/8" | New | N-80 | 4.7# | N/A | 7100 |
| Wellbore Diameter (in) | | Wall Thickness (in) | | Burst Pressure (psi) | | |
| 4.778" | | 0.19" | | 11200 | | |
| Cement Type | | Yield (cu. ft./sk) | Fillup - Cubic Feet | Top of Cement | Circulated to Surface? | |
| N/A | | N/A | N/A | N/A | <input type="checkbox"/> | |

PackersWill Packers be Used? ☐ Yes ☒ No

If Yes, complete the following:

| Kind | Sizes | Depths Set |
|------|-------|------------|
| | | |

Fluids, Cuttings Disposal and Reclamation PlanState: West VirginiaCounty: DoddridgeDistrict: 017Quadrangle: SMITHBURGZone: 17Northing: 4357129Easting: 524017API Number: 47-017-06398Operator Well Number: McMillan Unit 2H

Do you anticipate drilling/redrilling well work?

☒ Yes ☐ NoWill a pit be used for plugging activities? ☐ Yes ☒ No

If so, please describe anticipated pit waste:

No pit will be used at this site *See Closed Loop for Addtl
Detail

Will a synthetic liner be used in the pit? ☐ Yes ☒ No

If so, what ml.?

Proposed Disposal Method For Treated Pit Waste Water:

- ☐ Underground Injection (UIC Permit Number)
- ☒ Reuse (at API Number)
- ☐ Other (explain)

Will closed loop system be used? ☒ Yes ☐ No

If so, describe:

*Drilling and Flowback fluids will be stored in tanks.
Cuttings will be tanked and hauled off site.

1. Steel mud pits as part of the rig equipment for cleaning and conditioning the mud prior to being pumped down hole 2. Half rounds under the shale shakers for capturing cuttings and an auger for transporting cuttings from the half round to the cuttings boxes that are used to haul the cuttings to an approved offsite disposal facility 3. Frac tanks for any excess capacity mud storage that is required bayound the rig's steel pits 4. A flow line that transports the mud from the wellbore to the steel pits for cleaning and conditioning 5. Hose lines running from the steel mud pits to the mud pumps and from the mud pumps to the top drive for transporting the mud to the drill pipe to be sent down hole

Please Note: We DO NOT use an earthen reserve pit. Not using an earthen reserve pit is generally considered to be the definition of a "closed loop" mud system.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.

Surface - Air/Freshwater, Intermediate - Dust/Stiff Foam,
Production - Water Based Mud

If oil based, what type? Synthetic, petroleum, etc.

Additives to be used in drilling medium?

Drill cuttings disposal method?

- ☐ Leave in Pit (medium used) Explain:
- ☐ Landfill (name/permit number?)
- ☐ Removed Offsite (name/permit number?)
- ☐ Other: (please explain)

Proposed Revegetation Treatment:

Acres Disturbed:

Prevegetation pH:

Lime Tons/acre to correct to pH: Fertilizer (10-20-20 or equivalent): lbs/acreMulch lbs/acre

Comments:

Seed Mixtures

| Area Type | Seed Type | lbs/acre |
|----------------------------------------|--------------------------------------------------|---------------------------------|
| <input type="text" value="Temporary"/> | <input type="text" value="Tall Fescue"/> | <input type="text" value="45"/> |
| <input type="text" value="Temporary"/> | <input type="text" value="Perennial Rye Grass"/> | <input type="text" value="20"/> |
| <input type="text" value="Permanent"/> | <input type="text" value="Tall Fescue"/> | <input type="text" value="45"/> |
| <input type="text" value="Permanent"/> | <input type="text" value="Perennial Rye Grass"/> | <input type="text" value="20"/> |

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 99 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 17.91 acres

22) Area to be disturbed for well pad only, less access road (acres): 2.69 acres

23) Describe centralizer placement for each casing string:

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

24) Describe all cement additives associated with each cement type:

Conductor: no additives, Class A cement.

Surface: Class A cement with 2-3% calcium chloride

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

25) Proposed borehole conditioning procedures:

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

*Note: Attach additional sheets as needed.

Form WW-9 Additives Attachment

SURFACE INTERVAL

1. Fresh Water
2. Soap –Foamer AC
3. Air

INTERMEDIATE INTERVAL

STIFF FOAM RECIPE:

- 1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
- 2) 1 ppb Conqor 404 (11.76 ppg) / Corrosion Inhibitor
- 3) 4 ppb KLA-Gard (9.17 ppg) / Amine Acid Complex-Shale Stabilizer
- 4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
- 5) 12 ppb KCL / Potassium Chloride-inorganic Salt
- 6) Fresh Water 80 bbls
- 7) Air

PRODUCTION INTERVAL

1. Alpha 1655
Salt Inhibitor
2. Mil-Carb
Calcium Carbonate
3. Cottonseed Hulls
Cellulose-Cottonseed Pellets – LCM
4. Mil-Seal
Vegetable, Cotton & Cellulose-Based Fiber Blend – LCM
5. Clay-Trol
Amine Acid Complex – Shale Stabilizer
6. Xan-Plex
Viscosifier For Water Based Muds
7. Mil-Pac (All Grades)
Sodium Carboxymethylcellulose – Filtration Control Agent
8. New Drill
Anionic Polyacrylamide Copolymer Emulsion – Shale Stabilizer
9. Caustic Soda
Sodium Hydroxide – Alkalinity Control
10. Mil-Lime
Calcium Hydroxide – Lime
11. LD-9
Polyether Polyol – Drilling Fluid Defoamer
12. Mil Mica
Hydro-Biotite Mica – LCM

13. Escaid 110
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K
Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous
Inorganic Salt
18. D-D
Drilling Detergent – Surfactant
19. Terra-Rate
Organic Surfactant Blend
20. W.O. Defoam
Alcohol-Based Defoamer
21. Perma-Lose HT
Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D
Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells
Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite
Natural Graphite – LCM
25. Mil Bar
Barite – Weighting Agent
26. X-Cide 102
Biocide
27. Soda Ash
Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol
Amine Acid complex – Shale Stabilizer
29. Sulfatrol
Sulfonated Asphalt – Shale Control Additive
30. Xanvis
Viscosifier For Water-Based Muds
31. Milstarch
Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube
Drilling Fluid Lubricant



Well Site Safety Plan

Antero Resources

Well Name: Mishka Unit 1H, McMillan Unit 1H and 2H,
Hoskinson Unit 1H and 2H

Pad Location: CHESTNUT PAD
Doddridge County/ Grant District

GPS Coordinates: Lat 39°21'47.85"/Long 80°43'16.23" (NAD83)

Driving Directions:

From the intersection of US-50 W and County Rd 50/73 near the town of Salem head west on US-50 for 2.9 miles. Turn right onto Co Route 3/Big Flint Rd for 8.6 miles. Lease road will be on your left.

NCN
7-23-2013



Water Management Plan: Primary Water Sources



WMP- 01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Important:

For each proposed primary water source (including source intakes for purchased water sources) identified in your water management plan, and summarized herein, DEP has made an evaluation concerning water availability over the specified date range. DEP's assessment is based on the following considerations:

- Statistical analysis of historical USGS stream gauge data (transferred to un-gauged locations as necessary);
- Identification of sensitive aquatic life (endangered species, mussels, etc.);
- Quantification of known existing demands on the water supply (Large Quantity Users);
- Minimum flows required by the Army Corps of Engineers; and
- Designated stream uses.

Based on these factors, DEP has provided, for each intake location (and origination point for purchased water), a reference gauge location and discharge flow reading which must be surpassed prior to withdrawals. Additionally, DEP has established a minimum passby flow at the withdrawal location which must also be surpassed prior to withdrawals. These thresholds are considered terms of the permit and are enforceable as such.

DEP is aware that some intake points will be used for multiple wells and well sites. In these cases, the thresholds set by the Water Management Plan are to be interpreted as total withdrawal limits for each location over the specified date range regardless of how many wells are supported by that intake.

For all purchased water intakes, determinations of water availability are made at the original source intake location. It is the responsibility of the Oil and Gas Operator, not the seller, to cease withdrawal of water from the seller when flows are less than the minimum gauge reading at the stream gauge referenced by the Water Management Plan in order to protect stream uses.

Note that the determinations made herein are based on the best available data, but it is impossible to predict water availability in the future. While the DEP has carefully established these minimum withdrawal thresholds, it remains the operator's responsibility to protect aquatic life at all times. Approval to withdrawal is contingent upon permission from the land owner. It is the responsibility of the operator to secure and maintain permission prior to any withdrawals.

The operator is reminded that 24-48 hours prior to withdrawing (or purchasing) water, DEP must be notified by email at DEP.water.use@wv.gov.

APPROVED DEC 3 0 2013

Source Summary

WMP-01572

API Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Stream/River

● Source **Ohio River @ Ben's Run Withdrawal Site** Tyler Owner: **Ben's Run Land Company Limited Partnership**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.46593 | -81.110781 |

☒ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): **3,360** Min. Gauge Reading (cfs): **6,468.00** Min. Passby (cfs)

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: <http://www.erh.noaa.gov/ohrfc//flows.shtml>

● Source **West Fork River @ JCP Withdrawal** Harrison Owner: **James & Brenda Raines**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.320913 | -80.337572 |

☒ Regulated Stream? Stonewall Jackson Dam Ref. Gauge ID: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Max. Pump rate (gpm): **2,000** Min. Gauge Reading (cfs): **175.00** Min. Passby (cfs) **146.25**

DEP Comments:

● Source **West Fork River @ McDonald Withdrawal** Harrison Owner: **David Shrieves**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.16761 | -80.45069 |

☒ Regulated Stream? Stonewall Jackson Dam Ref. Gauge ID: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Max. Pump rate (gpm): **3,000** Min. Gauge Reading (cfs): **175.00** Min. Passby (cfs) **106.30**

DEP Comments:

Source **West Fork River @ GAL Withdrawal** Harrison Owner: **David Shrieves**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.16422 | -80.45173 |

☒ Regulated Stream? **Stonewall Jackson Dam** Ref. Gauge ID: **3061000** **WEST FORK RIVER AT ENTERPRISE, WV**

Max. Pump rate (gpm): **2,000** Min. Gauge Reading (cfs): **175.00** Min. Passby (cfs) **106.30**

DEP Comments:

Source **Middle Island Creek @ Mees Withdrawal Site** Pleasants Owner: **Sarah E. Mees**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.43113 | -81.079567 |

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **3,360** Min. Gauge Reading (cfs): **52.59** Min. Passby (cfs) **47.63**

DEP Comments:

Source **Middle Island Creek @ Dawson Withdrawal** Tyler Owner: **Gary D. and Rella A. Dawson**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.379292 | -80.867803 |

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **3,000** Min. Gauge Reading (cfs): **76.03** Min. Passby (cfs) **28.83**

DEP Comments:

Source **McElroy Creek @ Forest Withdrawal** Tyler Owner: **Forest C. & Brenda L. Moore**

Start Date End Date Total Volume (gal) Max. daily purchase (gal) Intake Latitude: Intake Longitude:
6/23/2014 6/23/2015 8,410,000 39.39675 -80.738197

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **74.77** Min. Passby (cfs) **13.10**

DEP Comments:

Source **Meathouse Fork @ Gagnon Withdrawal** Doddridge Owner: **George L. Gagnon and Susan C. Gagnon**

Start Date End Date Total Volume (gal) Max. daily purchase (gal) Intake Latitude: Intake Longitude:
6/23/2014 6/23/2015 8,410,000 39.26054 -80.720998

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **71.96** Min. Passby (cfs) **11.74**

DEP Comments:

Source **Meathouse Fork @ Whitehair Withdrawal** Doddridge Owner: **Elton Whitehair**

Start Date End Date Total Volume (gal) Max. daily purchase (gal) Intake Latitude: Intake Longitude:
6/23/2014 6/23/2015 8,410,000 39.211317 -80.679592

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **69.73** Min. Passby (cfs) **7.28**

DEP Comments:

• Source **Tom's Fork @ Erwin Withdrawal** **Doddridge** Owner: **John F. Erwin and Sandra E. Erwin**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.174306 | -80.702992 |

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **69.73** Min. Passby (cfs) **0.59**

DEP Comments:

• Source **Arnold Creek @ Davis Withdrawal** **Doddridge** Owner: **Jonathon Davis**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.302006 | -80.824561 |

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **69.73** Min. Passby (cfs) **3.08**

DEP Comments:

• Source **Buckeye Creek @ Powell Withdrawal** **Doddridge** Owner: **Dennis Powell**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.277142 | -80.690386 |

☐ Regulated Stream? Ref. Gauge ID: **3114500** **MIDDLE ISLAND CREEK AT LITTLE, WV**

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **69.73** Min. Passby (cfs) **4.59**

DEP Comments:

Source **South Fork of Hughes River @ Knight Withdrawal** Ritchie Owner: **Tracy C. Knight & Stephanie C. Knight**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.198369 | -80.870969 |

☐ Regulated Stream? Ref. Gauge ID: **3155220** SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

Max. Pump rate (gpm): **3,000** Min. Gauge Reading (cfs): **39.80** Min. Passby (cfs) **1.95**

DEP Comments:

Source **North Fork of Hughes River @ Davis Withdrawal** Ritchie Owner: **Lewis P. Davis and Norma J. Davis**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | | 39.322363 | -80.936771 |

☐ Regulated Stream? Ref. Gauge ID: **3155220** SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

Max. Pump rate (gpm): **1,000** Min. Gauge Reading (cfs): **35.23** Min. Passby (cfs) **2.19**

DEP Comments:

Source Summary

WMP 01572

API Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Purchased Water

● Source **Ohio River @ Select Energy** Pleasants Owner: **Select Energy**

| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| 6/23/2014 | 6/23/2015 | 8,410,000 | 500,000 | 39.346473 | -81.338727 |

☒ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999998 Ohio River Station: Racine Dam

Max. Pump rate (gpm): **1,680** Min. Gauge Reading (cfs): **7,216.00** Min. Passby (cfs)

DEP Comments: Refer to the specified station on the National Weather Service's Ohio River forecast website: <http://www.erh.noaa.gov/ohrfc//flows.shtml>

● Source **Middle Island Creek @ Solo Construction** Pleasants Owner: **Solo Construction, LLC**

| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| 6/23/2014 | 6/23/2015 | 8,410,000 | 1,000,000 | 39.399094 | -81.185548 |

☒ Regulated Stream? Ohio River Min. Flow Ref. Gauge ID: 9999999 Ohio River Station: Willow Island Lock & Dam

Max. Pump rate (gpm): Min. Gauge Reading (cfs): **6,468.00** Min. Passby (cfs)

DEP Comments: Elevation analysis indicates that this location has the same elevation as Middle Island Creek's pour point into the Ohio River. As such, it is deemed that water flow at this location is heavily influenced by the Ohio River.

● Source **Claywood Park PSD** Wood Owner: **Claywood Park PSD**

| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| 6/23/2014 | 6/23/2015 | 8,410,000 | | - | - |

☒ Regulated Stream? Ref. Gauge ID: 9999998 Ohio River Station: Racine Dam

Max. Pump rate (gpm): Min. Gauge Reading (cfs): **7,216.00** Min. Passby (cfs)

DEP Comments: Elevation analysis indicates that this location has approximately the same elevation as Little Kanawha's pour point into the Ohio River. As such, it is deemed that water flow at this location is heavily influenced by the Ohio River.

o Source **Sun Valley Public Service District** **Harrison** Owner: **Sun Valley PSD**

| | | | | | |
|------------|-----------|--------------------|---------------------------|------------------|-------------------|
| Start Date | End Date | Total Volume (gal) | Max. daily purchase (gal) | Intake Latitude: | Intake Longitude: |
| 6/23/2014 | 6/23/2015 | 8,410,000 | 200,000 | - | - |

☒ Regulated Stream? **Stonewall Jackson Dam** Ref. Gauge ID: **3061000** **WEST FORK RIVER AT ENTERPRISE, WV**

Max. Pump rate (gpm): **Min. Gauge Reading (cfs):** **171.48** **Min. Passby (cfs)**

DEP Comments:

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29613 Source Name: Ohio River @ Select Energy
Select Energy

Source Latitude: 39.346473
Source Longitude: -81.338727

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Pleasants

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,680

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☒ Regulated Stream? Ohio River Min. Flow
☐ Proximate PSD?
☒ Gauged Stream?

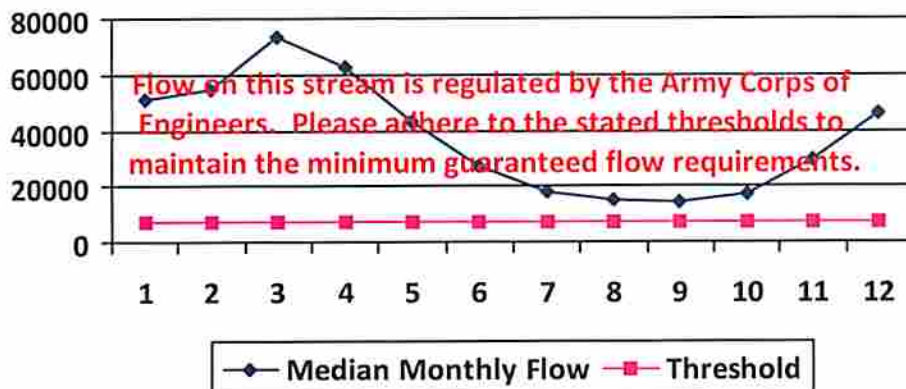
Reference Gaug: 9999998 Ohio River Station: Racine Dam

Drainage Area (sq. mi.): 25,000.00

Gauge Threshold (cfs): 7216

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 50,956.00 | - | - |
| 2 | 54,858.00 | - | - |
| 3 | 73,256.00 | - | - |
| 4 | 62,552.00 | - | - |
| 5 | 43,151.00 | - | - |
| 6 | 27,095.00 | - | - |
| 7 | 17,840.00 | - | - |
| 8 | 14,941.00 | - | - |
| 9 | 14,272.00 | - | - |
| 10 | 17,283.00 | - | - |
| 11 | 29,325.00 | - | - |
| 12 | 46,050.00 | - | - |

Water Availability Profile



Water Availability Assessment of Location

| | |
|-------------------------------|------|
| Base Threshold (cfs): | - |
| Upstream Demand (cfs): | 0.00 |
| Downstream Demand (cfs): | 0.00 |
| Pump rate (cfs): | 3.74 |
| Headwater Safety (cfs): | 0.00 |
| Ungauged Stream Safety (cfs): | 0.00 |
| Min. Gauge Reading (cfs): | - |
| Passby at Location (cfs): | - |

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29614 Source Name Middle Island Creek @ Solo Construction
Solo Construction, LLC

Source Latitude: 39.399094

Source Longitude: -81.185548

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Pleasants

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm) 0

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☒ Regulated Stream? Ohio River Min. Flow
☒ Proximate PSD? City of St. Marys
☒ Gauged Stream?

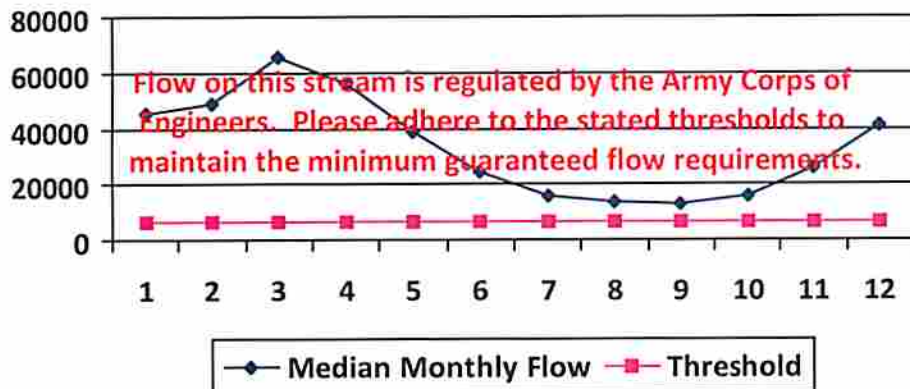
Reference Gaug 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.) 25,000.00

Gauge Threshold (cfs): 6468

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 45,700.00 | - | - |
| 2 | 49,200.00 | - | - |
| 3 | 65,700.00 | - | - |
| 4 | 56,100.00 | - | - |
| 5 | 38,700.00 | - | - |
| 6 | 24,300.00 | - | - |
| 7 | 16,000.00 | - | - |
| 8 | 13,400.00 | - | - |
| 9 | 12,800.00 | - | - |
| 10 | 15,500.00 | - | - |
| 11 | 26,300.00 | - | - |
| 12 | 41,300.00 | - | - |

Water Availability Profile



Water Availability Assessment of Location

| | |
|-------------------------------|------|
| Base Threshold (cfs): | - |
| Upstream Demand (cfs): | 0.00 |
| Downstream Demand (cfs): | 0.00 |
| Pump rate (cfs): | |
| Headwater Safety (cfs): | 0.00 |
| Ungauged Stream Safety (cfs): | 0.00 |
| Min. Gauge Reading (cfs): | - |
| Passby at Location (cfs): | - |

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01572

API/ID Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29615 Source Name: Claywood Park PSD
Claywood Park PSD

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5030203

Drainage Area (sq. mi.): 25000 County: Wood

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

☐ Endangered Species? ☒ Mussel Stream?

☐ Trout Stream? ☐ Tier 3?

☒ Regulated Stream?

Max. Pump rate (gpm):

☒ Proximate PSD? Claywood Park PSD

Max. Simultaneous Trucks: 0

☒ Gauged Stream?

Max. Truck pump rate (gpm) 0

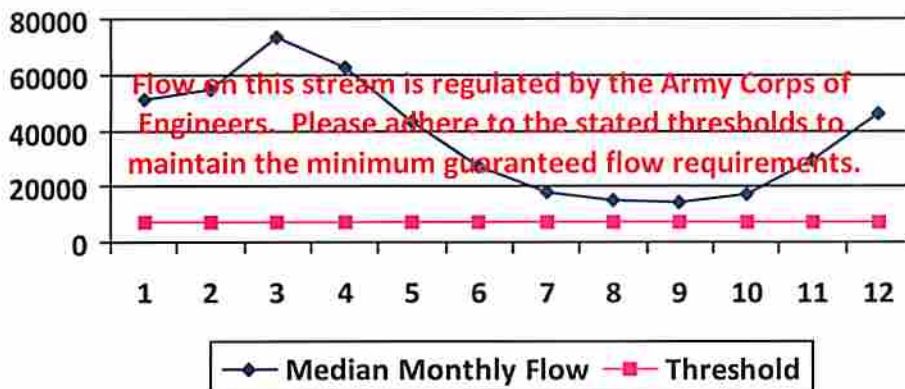
Reference Gaug 9999998 Ohio River Station: Racine Dam

Drainage Area (sq. mi.) 25,000.00

Gauge Threshold (cfs): 7216

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 50,956.00 | - | - |
| 2 | 54,858.00 | - | - |
| 3 | 73,256.00 | - | - |
| 4 | 62,552.00 | - | - |
| 5 | 43,151.00 | - | - |
| 6 | 27,095.00 | - | - |
| 7 | 17,840.00 | - | - |
| 8 | 14,941.00 | - | - |
| 9 | 14,272.00 | - | - |
| 10 | 17,283.00 | - | - |
| 11 | 29,325.00 | - | - |
| 12 | 46,050.00 | - | - |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs):

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29616 Source Name Sun Valley Public Service District
Sun Valley PSD

Source Latitude: -

Source Longitude: -

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 391.85 County: Harrison

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm):

Max. Simultaneous Trucks:

Max. Truck pump rate (gpm)

☐ Endangered Species? ☒ Mussel Stream?

☐ Trout Stream? ☐ Tier 3?

☒ Regulated Stream? Stonewall Jackson Dam

☐ Proximate PSD?

☒ Gauged Stream?

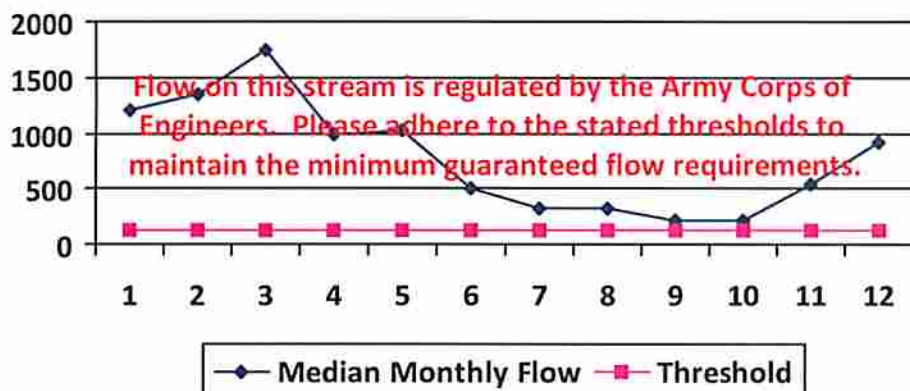
Reference Gaug 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.) 759.00

Gauge Threshold (cfs): 234

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------------|-----------------------|---------------------------------------|
| 1 | 1,200.75 | - | - |
| 2 | 1,351.92 | - | - |
| 3 | 1,741.33 | - | - |
| 4 | 995.89 | - | - |
| 5 | 1,022.23 | - | - |
| 6 | 512.21 | - | - |
| 7 | 331.86 | - | - |
| 8 | 316.87 | - | - |
| 9 | 220.48 | - | - |
| 10 | 216.17 | - | - |
| 11 | 542.45 | - | - |
| 12 | 926.12 | - | - |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs):

Downstream Demand (cfs):

Pump rate (cfs):

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29599 Source Name Ohio River @ Ben's Run Withdrawal Site
Ben's Run Land Company Limited Partnership

Source Latitude: 39.46593
Source Longitude: -81.110781

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 25000 County: Tyler

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☒ Regulated Stream? Ohio River Min. Flow
☐ Proximate PSD?
☒ Gauged Stream?

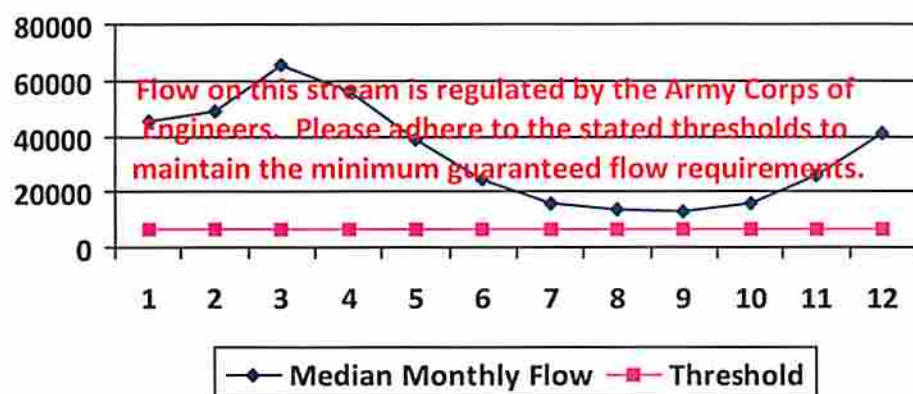
Reference Gaug 9999999 Ohio River Station: Willow Island Lock & Dam

Drainage Area (sq. mi.) 25,000.00

Gauge Threshold (cfs): 6468

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 45,700.00 | - | - |
| 2 | 49,200.00 | - | - |
| 3 | 65,700.00 | - | - |
| 4 | 56,100.00 | - | - |
| 5 | 38,700.00 | - | - |
| 6 | 24,300.00 | - | - |
| 7 | 16,000.00 | - | - |
| 8 | 13,400.00 | - | - |
| 9 | 12,800.00 | - | - |
| 10 | 15,500.00 | - | - |
| 11 | 26,300.00 | - | - |
| 12 | 41,300.00 | - | - |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -
 Upstream Demand (cfs): 0.00
 Downstream Demand (cfs): 0.00
 Pump rate (cfs): 7.49
 Headwater Safety (cfs): 0.00
 Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -
 Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29600 Source Name: West Fork River @ JCP Withdrawal
James & Brenda Raines

Source Latitude: 39.320913
Source Longitude: -80.337572

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 532.2 County: Harrison

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☒ Regulated Stream? Stonewall Jackson Dam
☐ Proximate PSD?
☒ Gauged Stream?

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

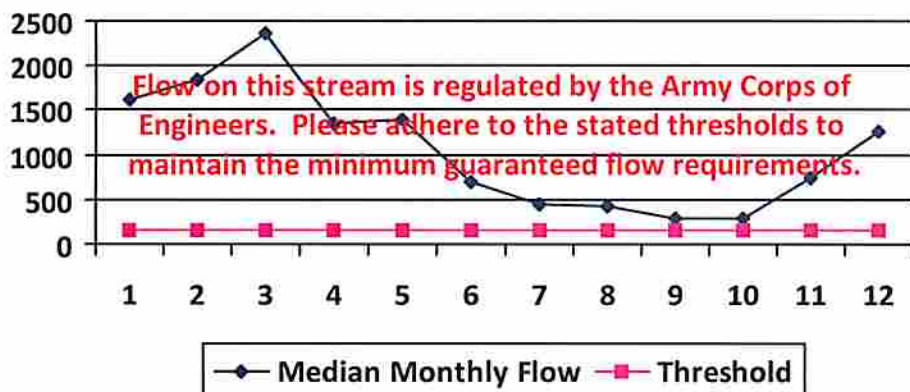
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 1,630.82 | - | - |
| 2 | 1,836.14 | - | - |
| 3 | 2,365.03 | - | - |
| 4 | 1,352.59 | - | - |
| 5 | 1,388.37 | - | - |
| 6 | 695.67 | - | - |
| 7 | 450.73 | - | - |
| 8 | 430.37 | - | - |
| 9 | 299.45 | - | - |
| 10 | 293.59 | - | - |
| 11 | 736.74 | - | - |
| 12 | 1,257.84 | - | - |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -
 Upstream Demand (cfs): 24.29
 Downstream Demand (cfs): 0.00
 Pump rate (cfs): 4.46
 Headwater Safety (cfs): 0.00
 Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -
 Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29601 Source Name West Fork River @ McDonald Withdrawal
David Shrieves

Source Latitude: 39.16761

Source Longitude: -80.45069

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 314.91 County: Harrison

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

☐ Endangered Species? ☒ Mussel Stream?

☐ Trout Stream? ☐ Tier 3?

☒ Regulated Stream? Stonewall Jackson Dam

☐ Proximate PSD?

☒ Gauged Stream?

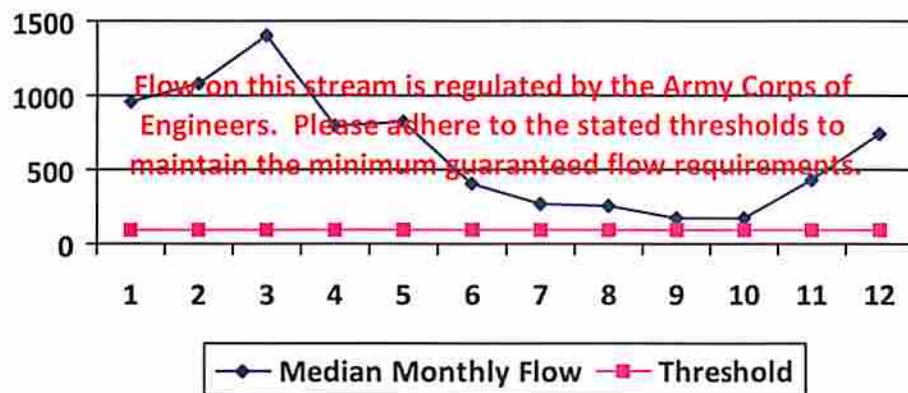
Reference Gaug 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.) 759.00

Gauge Threshold (cfs): 234

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 964.98 | - | - |
| 2 | 1,086.47 | - | - |
| 3 | 1,399.42 | - | - |
| 4 | 800.34 | - | - |
| 5 | 821.52 | - | - |
| 6 | 411.64 | - | - |
| 7 | 266.70 | - | - |
| 8 | 254.66 | - | - |
| 9 | 177.19 | - | - |
| 10 | 173.72 | - | - |
| 11 | 435.94 | - | - |
| 12 | 744.28 | - | - |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 24.29

Downstream Demand (cfs): 0.00

Pump rate (cfs): 6.68

Headwater Safety (cfs): 24.27

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator: Antero Resources

McMillan Unit 2H

Source ID: 29602 Source Name: West Fork River @ GAL Withdrawal
David Shrieves

Source Latitude: 39.16422

Source Longitude: -80.45173

HUC-8 Code: 5020002

Drainage Area (sq. mi.): 313.67 County: Harrison

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 2,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

☐ Endangered Species? ☒ Mussel Stream?

☐ Trout Stream? ☐ Tier 3?

☒ Regulated Stream? Stonewall Jackson Dam

☐ Proximate PSD?

☒ Gauged Stream?

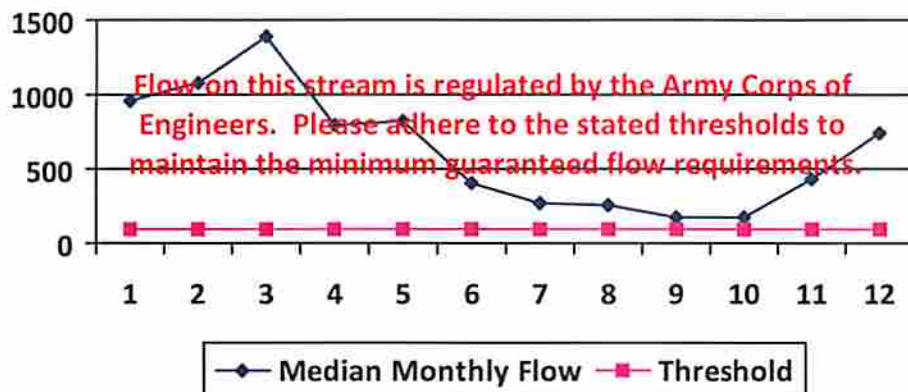
Reference Gaug: 3061000 WEST FORK RIVER AT ENTERPRISE, WV

Drainage Area (sq. mi.): 759.00

Gauge Threshold (cfs): 234

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 961.18 | - | - |
| 2 | 1,082.19 | - | - |
| 3 | 1,393.91 | - | - |
| 4 | 797.19 | - | - |
| 5 | 818.28 | - | - |
| 6 | 410.02 | - | - |
| 7 | 265.65 | - | - |
| 8 | 253.65 | - | - |
| 9 | 176.49 | - | - |
| 10 | 173.04 | - | - |
| 11 | 434.22 | - | - |
| 12 | 741.35 | - | - |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): -

Upstream Demand (cfs): 24.29

Downstream Demand (cfs): 0.00

Pump rate (cfs): 4.46

Headwater Safety (cfs): 24.18

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): -

Passby at Location (cfs): -

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator: Antero Resources

McMillan Unit 2H

Source ID: 29603 Source Name: Middle Island Creek @ Mees Withdrawal Site
Sarah E. Mees

Source Latitude: 39.43113
Source Longitude: -81.079567

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 484.78 County: Pleasants

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 3,360

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☒ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☒ Gauged Stream?

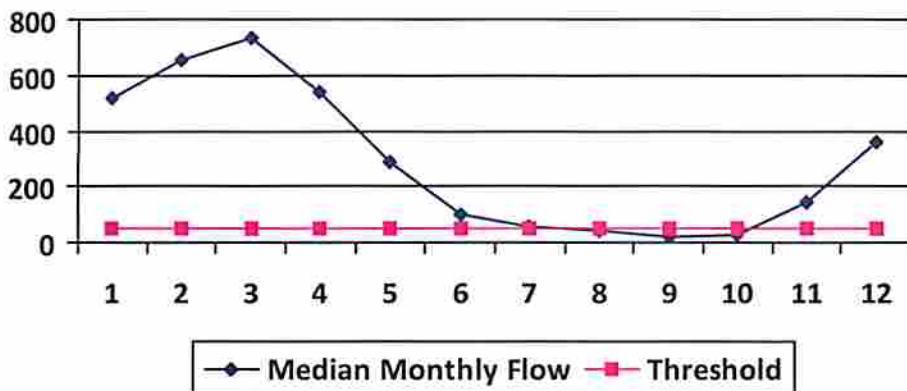
Reference Gaug 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.) 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 519.88 | 55.12 | 465.14 |
| 2 | 653.95 | 55.12 | 599.22 |
| 3 | 731.75 | 55.12 | 677.01 |
| 4 | 543.38 | 55.12 | 488.65 |
| 5 | 286.64 | 55.12 | 231.90 |
| 6 | 100.10 | 55.12 | 45.36 |
| 7 | 56.65 | 55.12 | 1.91 |
| 8 | 46.64 | 55.12 | -8.10 |
| 9 | 23.89 | 55.12 | -30.85 |
| 10 | 30.01 | 55.12 | -24.72 |
| 11 | 146.56 | 55.12 | 91.83 |
| 12 | 358.10 | 55.12 | 303.37 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 47.63

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 7.49

Headwater Safety (cfs): 0.00

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 52.49

Passby at Location (cfs): 47.63

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator: Antero Resources

McMillan Unit 2H

Source ID: 29604 Source Name: Middle Island Creek @ Dawson Withdrawal
Gary D. and Rella A. Dawson

Source Latitude: 39.379292

Source Longitude: -80.867803

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 181.34 County: Tyler

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☒ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☒ Gauged Stream?

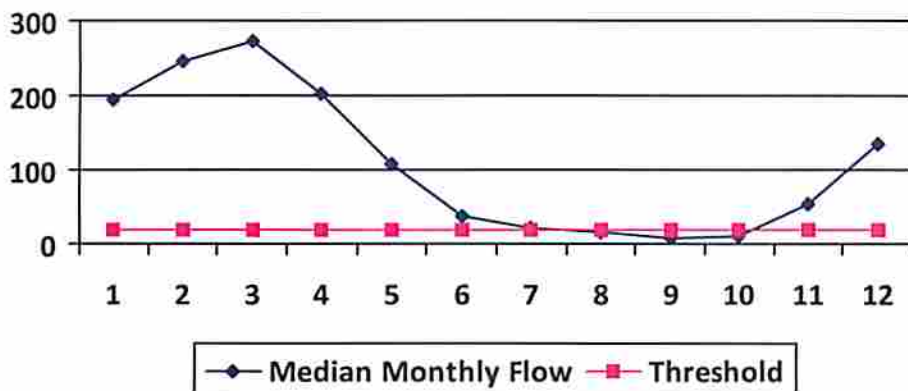
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 194.47 | 42.06 | 152.68 |
| 2 | 244.62 | 42.06 | 202.83 |
| 3 | 273.72 | 42.06 | 231.93 |
| 4 | 203.26 | 42.06 | 161.47 |
| 5 | 107.22 | 42.06 | 65.43 |
| 6 | 37.44 | 42.06 | -4.35 |
| 7 | 21.19 | 42.06 | -20.60 |
| 8 | 17.45 | 42.06 | -24.34 |
| 9 | 8.94 | 42.06 | -32.85 |
| 10 | 11.23 | 42.06 | -30.56 |
| 11 | 54.82 | 42.06 | 13.04 |
| 12 | 133.96 | 42.06 | 92.17 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 17.82

Upstream Demand (cfs): 13.10

Downstream Demand (cfs): 6.55

Pump rate (cfs): 6.68

Headwater Safety (cfs): 4.45

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 76.03

Passby at Location (cfs): 28.82

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29605 Source Name: McElroy Creek @ Forest Withdrawal
Forest C. & Brenda L. Moore

Source Latitude: 39.39675
Source Longitude: -80.738197

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 88.85 County: Tyler

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☐ Endangered Species? ☐ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

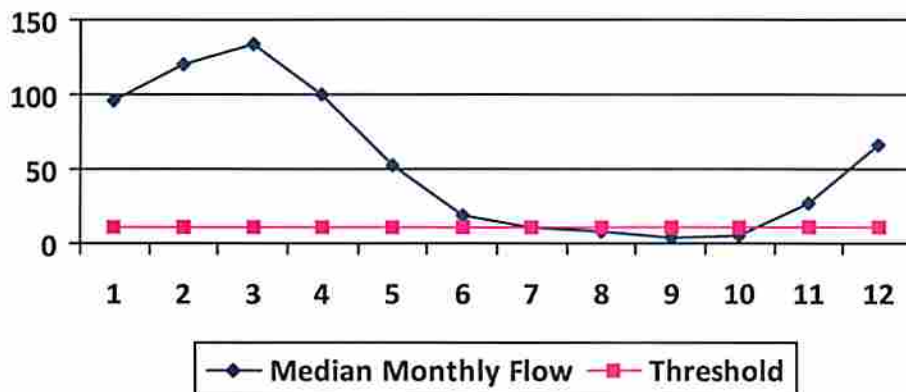
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 95.28 | 19.78 | 75.68 |
| 2 | 119.86 | 19.78 | 100.25 |
| 3 | 134.11 | 19.78 | 114.51 |
| 4 | 99.59 | 19.78 | 79.99 |
| 5 | 52.54 | 19.78 | 32.93 |
| 6 | 18.35 | 19.78 | -1.26 |
| 7 | 10.38 | 19.78 | -9.22 |
| 8 | 8.55 | 19.78 | -11.05 |
| 9 | 4.38 | 19.78 | -15.23 |
| 10 | 5.50 | 19.78 | -14.10 |
| 11 | 26.86 | 19.78 | 7.26 |
| 12 | 65.63 | 19.78 | 46.03 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 8.73

Upstream Demand (cfs): 4.46

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 2.18

Ungauged Stream Safety (cfs): 2.18

Min. Gauge Reading (cfs): 74.19

Passby at Location (cfs): 13.09

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01572

API/ID Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29606 Source Name: Meathouse Fork @ Gagnon Withdrawal
George L. Gagnon and Susan C. Gagnon

Source Latitude: 39.26054
Source Longitude: -80.720998

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 60.6 County: Doddridge

- ☒ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

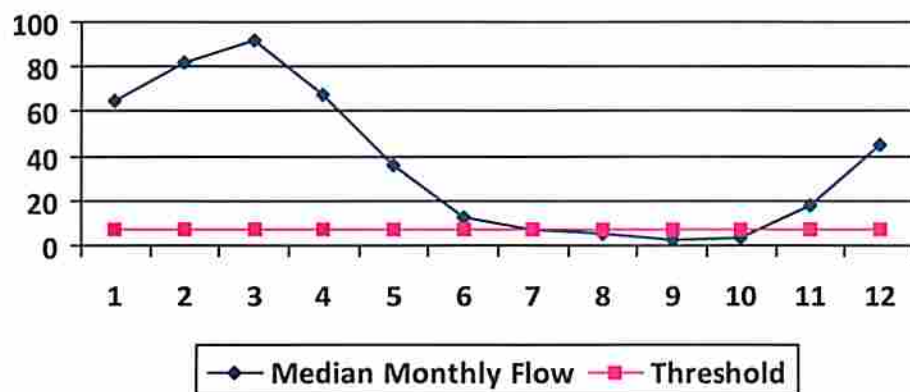
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 64.99 | 13.39 | 51.70 |
| 2 | 81.75 | 13.39 | 68.46 |
| 3 | 91.47 | 13.39 | 78.19 |
| 4 | 67.93 | 13.39 | 54.64 |
| 5 | 35.83 | 13.39 | 22.55 |
| 6 | 12.51 | 13.39 | -0.77 |
| 7 | 7.08 | 13.39 | -6.20 |
| 8 | 5.83 | 13.39 | -7.45 |
| 9 | 2.99 | 13.39 | -10.30 |
| 10 | 3.75 | 13.39 | -9.53 |
| 11 | 18.32 | 13.39 | 5.04 |
| 12 | 44.76 | 13.39 | 31.48 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 5.95

Upstream Demand (cfs): 2.23

Downstream Demand (cfs): 2.81

Pump rate (cfs): 2.23

Headwater Safety (cfs): 1.49

Ungauged Stream Safety (cfs): 1.49

Min. Gauge Reading (cfs): 71.96

Passby at Location (cfs): 11.74

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29607 Source Name Meathouse Fork @ Whitehair Withdrawal
Elton Whitehair

Source Latitude: 39.211317

Source Longitude: -80.679592

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 30.37 County: Doddridge

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☒ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

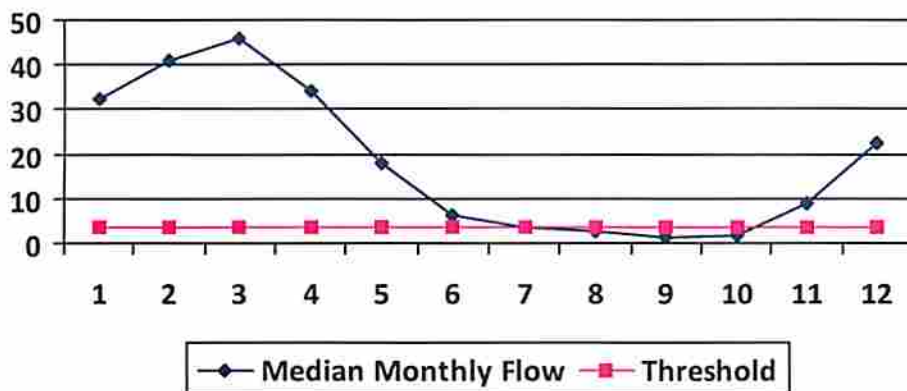
Reference Gaug 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.) 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 32.57 | 6.70 | 26.15 |
| 2 | 40.97 | 6.70 | 34.55 |
| 3 | 45.84 | 6.70 | 39.42 |
| 4 | 34.04 | 6.70 | 27.62 |
| 5 | 17.96 | 6.70 | 11.54 |
| 6 | 6.27 | 6.70 | -0.15 |
| 7 | 3.55 | 6.70 | -2.87 |
| 8 | 2.92 | 6.70 | -3.50 |
| 9 | 1.50 | 6.70 | -4.92 |
| 10 | 1.88 | 6.70 | -4.54 |
| 11 | 9.18 | 6.70 | 2.76 |
| 12 | 22.43 | 6.70 | 16.01 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 2.98

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 2.81

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.75

Ungauged Stream Safety (cfs): 0.75

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 7.29

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29608 Source Name: Tom's Fork @ Erwin Withdrawal
John F. Erwin and Sandra E. Erwin

Source Latitude: 39.174306

Source Longitude: -80.702992

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 4.01 County: Doddridge

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

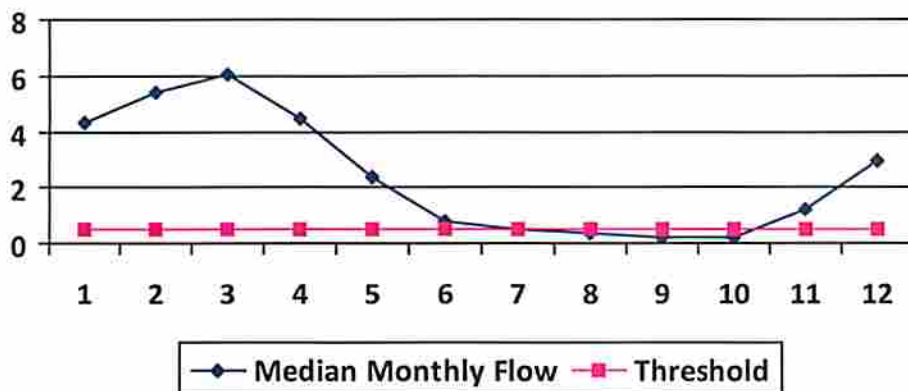
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 4.30 | 2.82 | 1.88 |
| 2 | 5.41 | 2.82 | 2.98 |
| 3 | 6.05 | 2.82 | 3.63 |
| 4 | 4.49 | 2.82 | 2.07 |
| 5 | 2.37 | 2.82 | -0.05 |
| 6 | 0.83 | 2.82 | -1.60 |
| 7 | 0.47 | 2.82 | -1.96 |
| 8 | 0.39 | 2.82 | -2.04 |
| 9 | 0.20 | 2.82 | -2.23 |
| 10 | 0.25 | 2.82 | -2.18 |
| 11 | 1.21 | 2.82 | -1.21 |
| 12 | 2.96 | 2.82 | 0.54 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 0.39

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.10

Ungauged Stream Safety (cfs): 0.10

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 0.59

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29609 Source Name: Arnold Creek @ Davis Withdrawal
Jonathon Davis

Source Latitude: 39.302006

Source Longitude: -80.824561

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 20.83 County: Doddridge

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

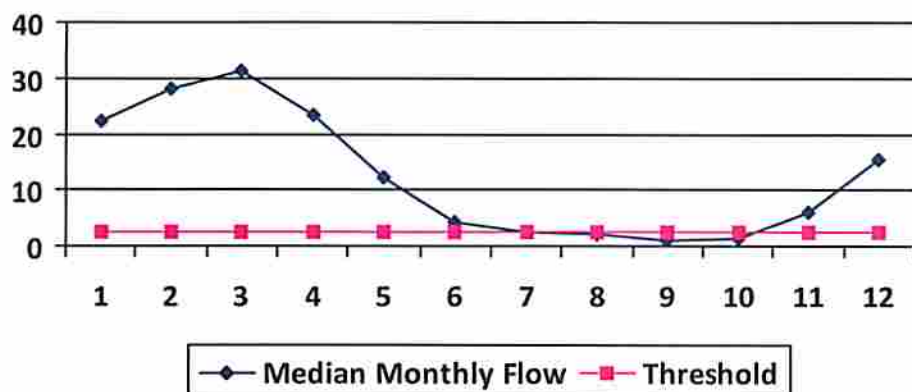
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 22.34 | 5.30 | 17.29 |
| 2 | 28.10 | 5.30 | 23.05 |
| 3 | 31.44 | 5.30 | 26.39 |
| 4 | 23.35 | 5.30 | 18.30 |
| 5 | 12.32 | 5.30 | 7.26 |
| 6 | 4.30 | 5.30 | -0.75 |
| 7 | 2.43 | 5.30 | -2.62 |
| 8 | 2.00 | 5.30 | -3.05 |
| 9 | 1.03 | 5.30 | -4.03 |
| 10 | 1.29 | 5.30 | -3.76 |
| 11 | 6.30 | 5.30 | 1.25 |
| 12 | 15.39 | 5.30 | 10.34 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 2.05

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.51

Ungauged Stream Safety (cfs): 0.51

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 3.07

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29610 Source Name: Buckeye Creek @ Powell Withdrawal
Dennis Powell

Source Latitude: 39.277142

Source Longitude: -80.690386

HUC-8 Code: 5030201

Drainage Area (sq. mi.): 31.15 County: Doddridge

- ☐ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☐ Gauged Stream?

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

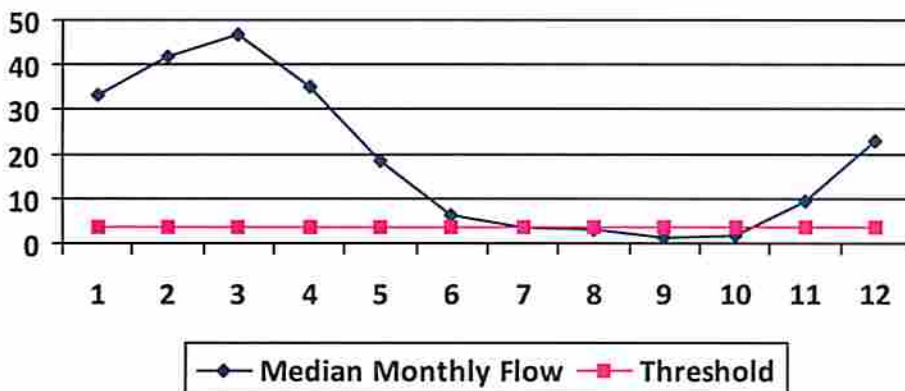
Reference Gaug: 3114500 MIDDLE ISLAND CREEK AT LITTLE, WV

Drainage Area (sq. mi.): 458.00

Gauge Threshold (cfs): 45

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------|--------------------|---------------------------------|
| 1 | 33.41 | 6.82 | 26.95 |
| 2 | 42.02 | 6.82 | 35.56 |
| 3 | 47.02 | 6.82 | 40.56 |
| 4 | 34.92 | 6.82 | 28.46 |
| 5 | 18.42 | 6.82 | 11.96 |
| 6 | 6.43 | 6.82 | -0.03 |
| 7 | 3.64 | 6.82 | -2.82 |
| 8 | 3.00 | 6.82 | -3.46 |
| 9 | 1.53 | 6.82 | -4.92 |
| 10 | 1.93 | 6.82 | -4.53 |
| 11 | 9.42 | 6.82 | 2.96 |
| 12 | 23.01 | 6.82 | 16.55 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 3.06

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.77

Ungauged Stream Safety (cfs): 0.77

Min. Gauge Reading (cfs): 69.73

Passby at Location (cfs): 4.59

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP- 01572

API/ID Number: 047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29611 Source Name South Fork of Hughes River @ Knight Withdrawal
Tracy C. Knight & Stephanie C. Knight

Source Latitude: 39.198369

Source Longitude: -80.870969

HUC-8 Code: 5030203

Drainage Area (sq. mi.): 16.26 County: Ritchie

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 3,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

- ☒ Endangered Species? ☒ Mussel Stream?
☐ Trout Stream? ☐ Tier 3?
☐ Regulated Stream?
☐ Proximate PSD?
☒ Gauged Stream?

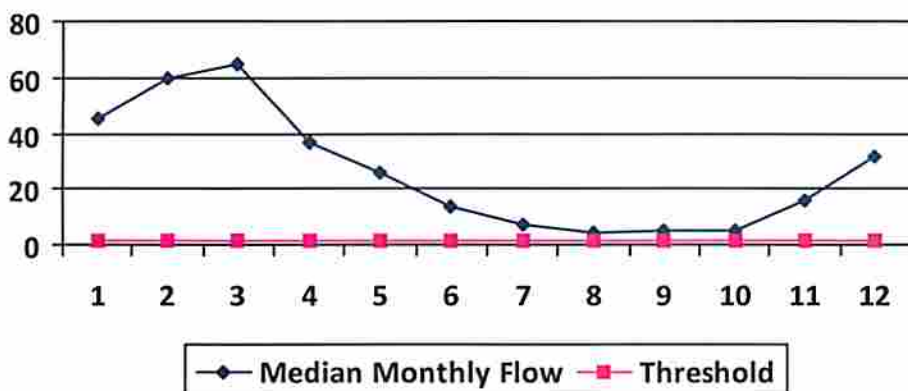
Reference Gaug 3155220 SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

Drainage Area (sq. mi.) 229.00

Gauge Threshold (cfs): 22

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------------|-----------------------|---------------------------------------|
| 1 | 45.67 | 14.26 | 31.44 |
| 2 | 59.55 | 14.26 | 45.31 |
| 3 | 65.21 | 14.26 | 50.97 |
| 4 | 36.87 | 14.26 | 22.63 |
| 5 | 25.86 | 14.26 | 11.63 |
| 6 | 13.90 | 14.26 | -0.33 |
| 7 | 6.89 | 14.26 | -7.34 |
| 8 | 3.98 | 14.26 | -10.25 |
| 9 | 4.79 | 14.26 | -9.45 |
| 10 | 5.20 | 14.26 | -9.04 |
| 11 | 15.54 | 14.26 | 1.30 |
| 12 | 32.06 | 14.26 | 17.82 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 1.56

Upstream Demand (cfs): 5.62

Downstream Demand (cfs): 0.00

Pump rate (cfs): 6.68

Headwater Safety (cfs): 0.39

Ungauged Stream Safety (cfs): 0.00

Min. Gauge Reading (cfs): 39.80

Passby at Location (cfs): 1.95

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.

Source Detail

WMP-01572

API/ID Number:

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Source ID: 29612

Source Name North Fork of Hughes River @ Davis Withdrawal

Source Latitude: 39.322363

Lewis P. Davis and Norma J. Davis

Source Longitude: -80.936771

HUC-8 Code: 5030203

Drainage Area (sq. mi.): 15.18

County: Ritchie

Anticipated withdrawal start date: 6/23/2014

Anticipated withdrawal end date: 6/23/2015

Total Volume from Source (gal): 8,410,000

Max. Pump rate (gpm): 1,000

Max. Simultaneous Trucks: 0

Max. Truck pump rate (gpm): 0

☒ Endangered Species? ☒ Mussel Stream?

☐ Trout Stream? ☐ Tier 3?

☐ Regulated Stream?

☐ Proximate PSD?

☐ Gauged Stream?

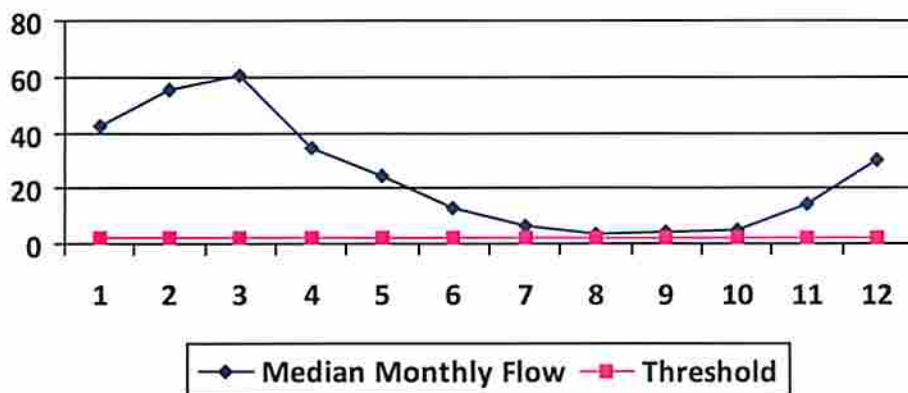
Reference Gaug 3155220 SOUTH FORK HUGHES RIVER BELOW MACFARLAN, WV

Drainage Area (sq. mi.) 229.00

Gauge Threshold (cfs): 22

| Month | Median monthly flow (cfs) | Threshold (+ pump) | Estimated Available water (cfs) |
|-------|---------------------------------|-----------------------|---------------------------------------|
| 1 | 42.64 | 4.42 | 38.36 |
| 2 | 55.59 | 4.42 | 51.32 |
| 3 | 60.88 | 4.42 | 56.60 |
| 4 | 34.42 | 4.42 | 30.14 |
| 5 | 24.15 | 4.42 | 19.87 |
| 6 | 12.98 | 4.42 | 8.70 |
| 7 | 6.44 | 4.42 | 2.16 |
| 8 | 3.72 | 4.42 | -0.56 |
| 9 | 4.47 | 4.42 | 0.19 |
| 10 | 4.85 | 4.42 | 0.57 |
| 11 | 14.50 | 4.42 | 10.23 |
| 12 | 29.93 | 4.42 | 25.65 |

Water Availability Profile



Water Availability Assessment of Location

Base Threshold (cfs): 1.46

Upstream Demand (cfs): 0.00

Downstream Demand (cfs): 0.00

Pump rate (cfs): 2.23

Headwater Safety (cfs): 0.36

Ungauged Stream Safety (cfs): 0.36

Min. Gauge Reading (cfs): 35.23

Passby at Location (cfs): 2.19

"Threshold", as depicted in the chart above is meant only to indicate the calculated base threshold at the proposed withdrawal location. This value does not include the proposed pump rate or existing demand on the stream. Refer to the monthly breakdown above for a more complete estimation of water availability by month.



Water Management Plan: Secondary Water Sources



WMP- 01572

API/ID Number

047-017-06398

Operator:

Antero Resources

McMillan Unit 2H

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Lake/Reservior

| | | | | | |
|---------------------------|-----------|---------------------------------|-----------------------------------------|--------------------|-----------|
| Source ID: | 29617 | Source Name | City of Salem Reservior (Lower Dog Run) | Source start date: | 6/23/2014 |
| | | | Public Water Provider | Source end date: | 6/23/2015 |
| Source Lat: | 39.28834 | Source Long: | -80.54966 | County | Harrison |
| Max. Daily Purchase (gal) | 1,000,000 | Total Volume from Source (gal): | 8,410,000 | | |
| DEP Comments: | | | | | |

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

| | | | | | | | |
|------------|-------|---------------------------|----------------|---------------------------------|--------------------|-----------|---------|
| Source ID: | 29618 | Source Name | Pennsboro Lake | | Source start date: | 6/23/2014 | |
| | | | | | Source end date: | 6/23/2015 | |
| | | Source Lat: | 39.281689 | Source Long: | -80.925526 | County | Ritchie |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | 8,410,000 | |
| | | DEP Comments: | | | | | |

| | | | | | | | |
|------------|-------|---------------------------|-----------------------------------------|---------------------------------|--------------------|-----------|----------|
| Source ID: | 29619 | Source Name | Powers Lake (Wilderness Water Park Dam) | | Source start date: | 6/23/2014 | |
| | | | Private Owner | | Source end date: | 6/23/2015 | |
| | | Source Lat: | 39.255752 | Source Long: | -80.463262 | County | Harrison |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | 8,410,000 | |
| | | DEP Comments: | | | | | |

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

| | | | | | | |
|------------|-------|---------------------------|-----------------|---------------------------------|--------------------|------------------|
| Source ID: | 29620 | Source Name | Powers Lake Two | | Source start date: | 6/23/2014 |
| | | | | | Source end date: | 6/23/2015 |
| | | Source Lat: | 39.247604 | Source Long: | -80.466642 | County: Harrison |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | 8,410,000 |
| | | DEP Comments: | | | | |

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Other

| | | | | | |
|---------------------------|-----------|---------------------------------|----------------------------|--------------------|-----------|
| Source ID: | 29621 | Source Name | Poth Lake (Landowner Pond) | Source start date: | 6/23/2014 |
| | | | Private Owner | Source end date: | 6/23/2015 |
| Source Lat: | 39.221306 | Source Long: | -80.463028 | County | Harrison |
| Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | | 8,410,000 |
| DEP Comments: | | | | | |

| | | | | | |
|---------------------------|----------|---------------------------------|----------------------------------|--------------------|-----------|
| Source ID: | 29622 | Source Name | Williamson Pond (Landowner Pond) | Source start date: | 6/23/2014 |
| | | | | Source end date: | 6/23/2015 |
| Source Lat: | 39.19924 | Source Long: | -80.886161 | County | Ritchie |
| Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | | 8,410,000 |
| DEP Comments: | | | | | |

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

| | | | | | | | |
|------------|-------|---------------------------|----------------------------|---------------------------------|--------------------|-----------|-----------|
| Source ID: | 29623 | Source Name | Eddy Pond (Landowner Pond) | | Source start date: | 6/23/2014 | |
| | | | | | Source end date: | 6/23/2015 | |
| | | Source Lat: | 39.19924 | Source Long: | -80.886161 | County | Ritchie |
| | | Max. Daily Purchase (gal) | | Total Volume from Source (gal): | | | 8,410,000 |
| | | DEP Comments: | | | | | |

| | | | | | | | |
|---------------|-------|---------------------------|---------------------|---------------------------------|--------------------|-----------|--------|
| Source ID: | 29624 | Source Name | Hog Lick Quarry | | Source start date: | 6/23/2014 | |
| | | | Industrial Facility | | Source end date: | 6/23/2015 | |
| | | Source Lat: | 39.419272 | Source Long: | -80.217941 | County | Marion |
| | | Max. Daily Purchase (gal) | 1,000,000 | Total Volume from Source (gal): | | 8,410,000 | |
| DEP Comments: | | | | | | | |

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

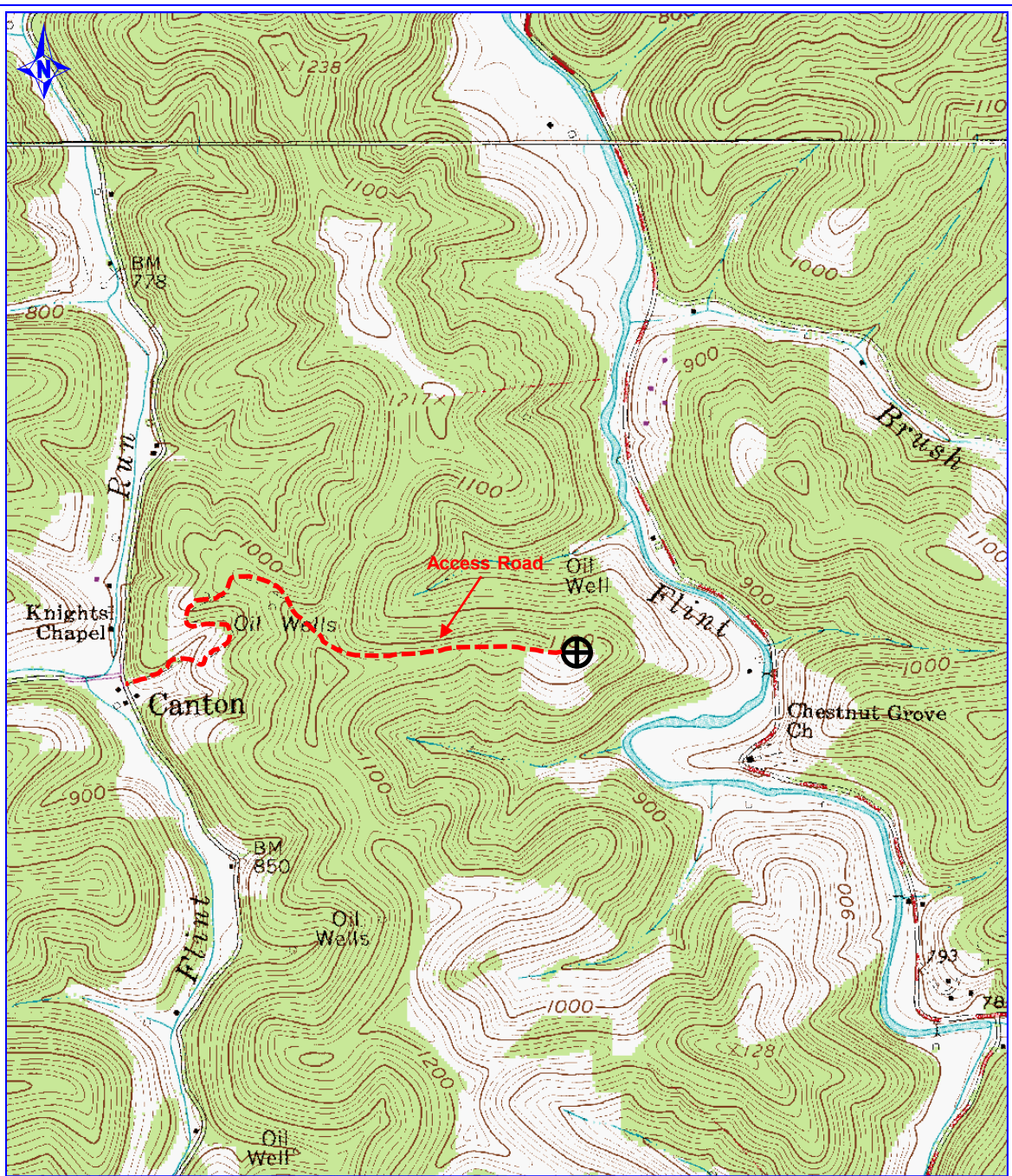
| | | | | | |
|---------------------------|-----------|---------------------------------|---------------------|--------------------|-----------|
| Source ID: | 29625 | Source Name | Glade Fork Mine | Source start date: | 6/23/2014 |
| | | | Industrial Facility | Source end date: | 6/23/2015 |
| Source Lat: | 38.965767 | Source Long: | -80.299313 | County | Upshur |
| Max. Daily Purchase (gal) | 1,000,000 | Total Volume from Source (gal): | 8,410,000 | | |

DEP Comments:

Recycled Frac Water

| | | | | | |
|---------------------------|-------|---------------------------------|-----------|--------------------|-----------|
| Source ID: | 29626 | Source Name | Various | Source start date: | 6/23/2014 |
| | | | | Source end date: | 6/23/2015 |
| Source Lat: | | Source Long: | | County | |
| Max. Daily Purchase (gal) | | Total Volume from Source (gal): | 8,410,000 | | |

DEP Comments: Sources may include, but are not limited to: Hoskinson Unit 2H



PETRA 4/16/2013 5:03:01 PM

Antero Resources Corp

APPALACHIAN BASIN

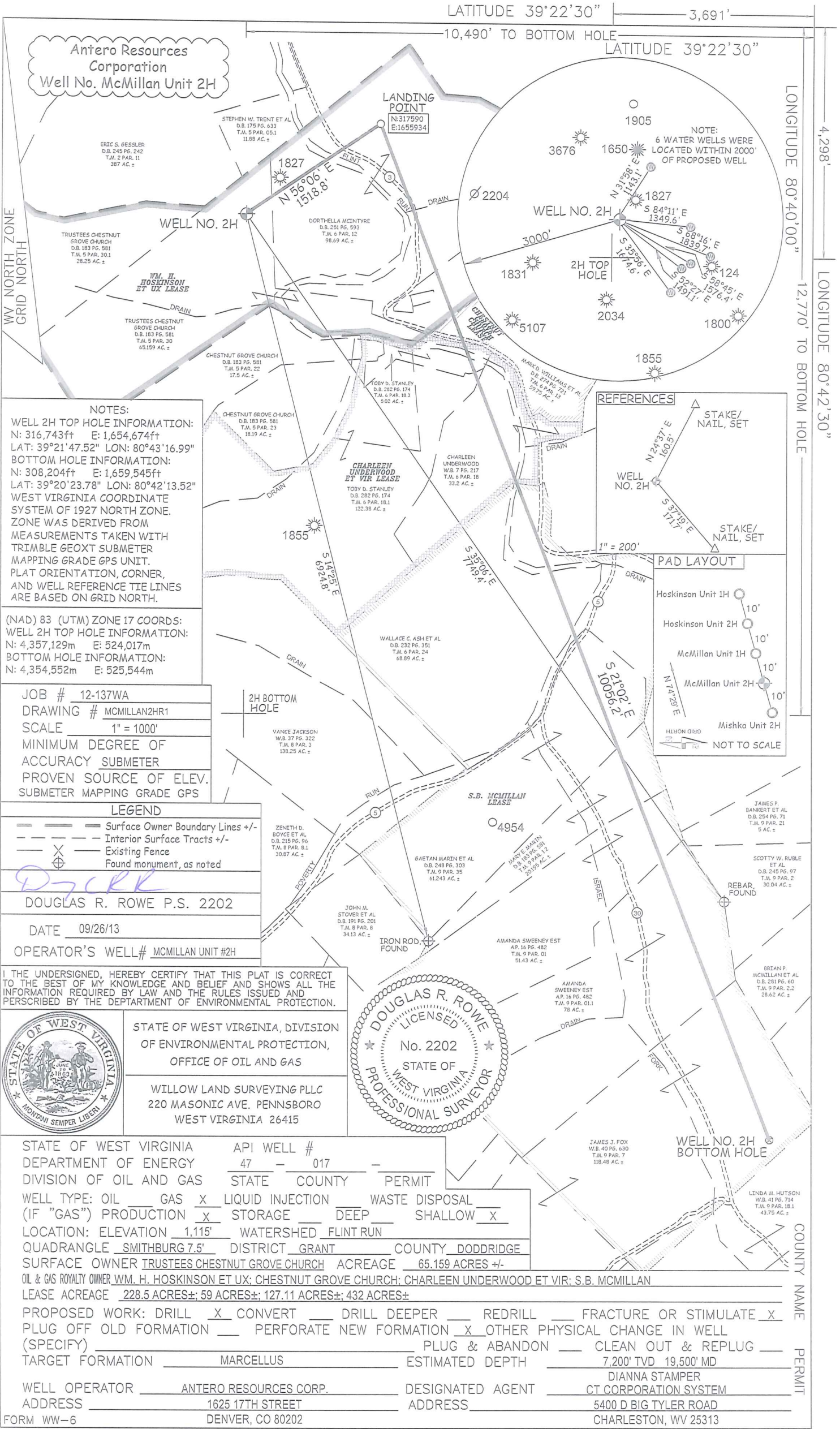
McMillan Unit 2H

Doddridge County

REMARKS
QUADRANGLE: SMITHBURG
WATERSHED: LITTLE FLINT RUN
DISTRICT: GRANT

By: ECM





CHESTNUT DRILL PAD SITE
FINAL SITE DESIGN, CONSTRUCTION PLAN, AND
EROSION & SEDIMENT CONTROL PLANS
ANTERO RESOURCES APPALACHIAN CORPORATION

SAY 6/19/2013



| | | | | |
|-------------------|-----------|-----------|---|----|
| DATE SUBMITTED | 0-10-2018 | 0-10-2018 | 1 | 30 |
|-------------------|-----------|-----------|---|----|



WB
Walt Brothers Consulting, LLC

ENGINEERING AND SURVEYING
467 CALL ROAD, SUITE 118
CHARLESTON, WV 25312
(304) 533-3404
www.waltbrothers.com

[illegible]

A topographic map of the Chestnut area in the Adirondacks. The map shows the Chestnut River flowing through the center, with several tributaries including the Break Run, Wolf Run, and Wolf Run. The town of Chestnut is marked with a black dot. Other features include the Chestnut River, the Break Run, the Wolf Run, and the Wolf Run. The map also shows the surrounding terrain with contour lines and various roads.

● PROJECT LOCATION
SCALE 1" = 2000'

| | | | |
|-----------------|-----------------|-----------------|-----------------|
| DENZIL F. PRATT | DENZIL F. PRATT | DENZIL F. PRATT | ROBERT J. SMITH |
| DB 202 PAGE 227 | DB 202 PAGE 227 | DB 195 PAGE 395 | DB 245 PAGE 32 |
| TM 5 PARCEL 20 | TM 5 PARCEL 19 | TM 5 PARCEL 10 | TM 5 PARCEL 9 |
| GRANT DISTRICT | GRANT DISTRICT | GRANT DISTRICT | GRANT DISTRICT |

TRUSTEES CHESTNUT GROVE CHURCH
DB 183 PAGE 581
TM 5 PARCEL 30
GRANT DISTRICT

| WELL HEAD LAYOUT STATE PLANE NAD 83 (N+ NORTH ZONE) | | | | |
|--------------------------------------------------------|-------------|-------------|---------------|----------------|
| | NORTH | EAST | LATITUDE | LONGITUDE |
| BRICKMAN UNIT 2H | 345775.0748 | 760332.8889 | 38-21-47.3469 | -85-43-35.4840 |
| BRICKMAN UNIT 2H | 345770.6509 | 760232.6504 | 38-21-47.8098 | -85-43-35.2630 |
| BRICKMAN UNIT 2H | 345761.3257 | 760232.4258 | 38-21-47.8552 | -85-43-35.2424 |
| BRICKMAN UNIT 2H | 345766.0111 | 762325.6733 | 38-21-47.8878 | -85-43-35.1182 |
| BRICKMAN UNIT 2H | 345760.4205 | 762330.5062 | 38-21-47.0079 | -85-43-35.0608 |

WELL LOCATION RESTRICTIONS

- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
- 625' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 2500SF USED FOR POULTRY OR DAIRY
- MEASURED FROM THE CENTER OF THE POND
- 150' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
- 500' FROM EDGE OF DISTURBANCE TO NATURALLY REPRODUCING TROUT STREAMS
- 500' TO SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY

| | | |
|-----------------------------------------------------------|-------------|----|
| DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN: | | NO |
| PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR: | | NO |
| HEC-RAS STUDY COMPLETED: | | NA |
| FLOODPLAIN SHOWN ON DRAWINGS: | | NA |
| FROM MAP NUMBER(S) FOR SITE: | 54311C3130C | |
| ADJEACMENTS OF CONSTRUCTION IN FLOODPLAIN: | | NA |

| | |
|-------------------------------------|-------|
| COVER PAGE & LOCATION MAP | 1 |
| SCHEDULE OF QUANTITIES | 2 |
| CONSTRUCTION, GENERAL AND E&E NOTES | 3 |
| EXISTING CONDITIONS PLAN | 4 |
| OVERALL SITE PLAN | 5 |
| EROSION & SEDIMENT CONTROL PLAN | 8-9 |
| FINAL SITE DESIGN | 10-11 |
| DRILL PAD PROFILE & CROSS-SECTIONS | 14 |
| ROAD PROFILES | 15-17 |
| PAD ROAD CROSS-SECTIONS | 17-18 |
| CONSTRUCTION DETAILS | 31-32 |
| RECLAMATION PLAN | 33-34 |

DESIGN CERTIFICATION
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAM
ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST
VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS §35-4-21.

MM-100 PERMIT
ANTERO RESOURCES WILL OBTAIN AN ENCROACHMENT PERMIT (MM-100) FROM
THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS,
PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

ANTERO RESOURCES
ANTHONY SMITH, FIELD ENGINEER
204-899-3485 OFFICE
204-873-6195 CELL

DU WAGOVER, ENVIRONMENTAL ENGINEER
304-622-3842, EXT. 511
OFFICE 304-478-9778

JOHN KAWCZAK, ENGINEER
817-389-1559

AARON KUNZLER, CONSTRUCTION SUPERVISOR
405-277-8344

SURVEYOR & ENGINEER
WHITE BROTHERS CONSULTING, LLC
LEE SNYDER, P.E.
304-550-0484
TIMOTHY T. WHITE, P.E.
304-551-4477

MISS UTILITY OF WEST VIRGINIA
1-800-246-4848

WEST VIRGINIA STATE LAW REQUIRES
THAT YOU CALL TWO BUSINESS DAYS
BEFORE YOU DIG IN THE STATE OF
WEST VIRGINIA. IT'S THE LAW!



Know what's below.
Call before you dig.

| SITE LOCATIONS STATE PLANE 1403 (WV NORTH ZONE) | | |
|----------------------------------------------------|---------------|----------------|
| | LATITUDE | LONGITUDE |
| CENTER OF PAD | 39-21-47.8557 | -80-43-16.2343 |
| BEGIN ENTRANCE ROAD | 39-21-48.2333 | -80-44-04.8912 |
| CENTER OF PAD (UTM 03-17 M) | N 4357128.882 | E 524019.089 |

| TOTAL DISTURBANCE (ACRES) | |
|--------------------------------------------|-------|
| LAND OWNER | AREA |
| DENZEL F. PRATT (PAR. 30) | 3.40 |
| DENZEL F. PRATT (PAR. 29) | 0.00 |
| DENZEL F. PRATT (PAR. 30) | 0.00 |
| ROBERT J. SMITH (PAR. 30) | 0.00 |
| TRUSTEES CHESTNUT GROVE CHURCH (PAR. 30) | 3.78 |
| TRUSTEES CHESTNUT GROVE CHURCH (PAR. 30.5) | 11.82 |

NOTE: A PORTION OF THE TOTAL LOD WAS ACCOUNTED FOR IN THE RJ SMITH PAD SITE DESIGN.

| LOD AREAS (ACRES) | |
|--------------------------------------------|-------|
| DESCRIPTION | AREA |
| MAIN ACCESS ROAD TO PAD AND TRUCK TURNOUTS | 11.12 |
| DRILL PAD | 2.89 |
| SPOIL PAD | 5.10 |
| TOTAL | 19.00 |
| TOTAL WOODED | 18.00 |

NOTE: A PORTION OF THE TOTAL LCD WAS ACCOUNTED FOR IN THE BU SMITH PAD SITE DESIGN.

| LENGTH (FEET) | |
|---------------------------------------------------|----------|
| DESCRIPTION | FEET |
| COUNTY ROUTE TO END OF RJ SMITH PERMITTED ROAD | 1,555.67 |
| END OF RJ SMITH PERMITTED ROAD TO CHESTNUT RAD | 3,282.13 |
| TOTAL | 4,838 |

| STREAM IMPACTS (LINEAR FEET) | |
|------------------------------|-------------|
| DESCRIPTION | LINEAR FEET |
| RPW PERENNIAL | 0 |
| RPW EPHEMERAL | 0 |
| PEM WETLANDS | 0 |
| RPW INTERMITTENT | 0 |
| TOTAL | 0 |

NOTE: ALL STREAM IMPACTS WERE ACCOUNTED FOR IN THE BL RUMTHPAD SITE DESIGN.



APPROXIMATE PROPERTY LINE

LIMITS OF DISTURBANCE

AREA OF INTEREST

PROPOSED AREA OF INTEREST

SILT FENCE

SUPER SILT FENCE

SILT SOGE

EXISTING GAS LINE

EXISTING FENCE LINE

EXISTING UTILITY POLE

EXISTING TREE LINE

PROPOSED WOVEN WIRE FENCE

RW/PERMANENT STREAM

RW/PERENNIAL STREAM

PERI WETLANDS

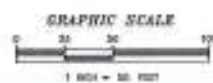
RW/INTERMITTENT

POW WETLANDS

DITCH

SF, SSF AND SILT SOGE INDICATOR

| SF, SSF & SLY BOOK TABLE | | | |
|--------------------------|---------|----------|----------|
| ID NUMBER | SF (LF) | SSF (LF) | SLY (LF) |
| 52 | | | 303 |
| 53 | | | 57 |
| 54 | | | 24 |
| 55 | | | 24 |
| 56 | | | 25 |
| 57 | | 34 | |
| 58 | | 62 | |
| 59 | | 138 | |
| 60 | | 168 | |
| SUBTOTAL 2 | | 402 | 433 |
| SUBTOTAL 1 | | 1,763 | 650 |
| SUBTOTAL 1 | | 1,635 | 46 |
| TOTALS | | 3,230 | 1,328 |



NORTH MEYERIAN REFERENCED
TO HAZARDOUS WASTE
STATE PLANS NORTH 2048

| | | |
|-----------------|----------------|----------------|
| DATE REMARKS | NO. OF FOL. | TOTAL WORDS |
| 6-13-2013 | 1 | 20 |



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
APPALACHIAN CORP

FINAL DESIGN
EROSION & SEDIMENT CONTROL PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

| | |
|------|----|
| DATE | BY |
|------|----|

| |
|--|
| |
|--|

100

1992

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